NEW TECHNOLOGIES

CHALLENGES FOR FIRMS, MARKETS AND POLICY-MAKERS

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SEMINAR - UNIVERSIDAD DE VALENCIA - 9 MAY 2019

OUTLINE

- NEW TECHNOLOGIES & TRADE
- ADOPTION OF TECHNOLOGY IN BUSINESS
- DIGITAL TRADE RESTRICTIONS
- DIGITAL TRADE & THE WTO

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NEW TECHNOLOGIES & TRADE

- Internet of Things

NEW TECHNOLOGIES & TRADE

- Internet of Things
- Artificial Intelligence

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- Internet of Things
- Artificial Intelligence
- Blockchain

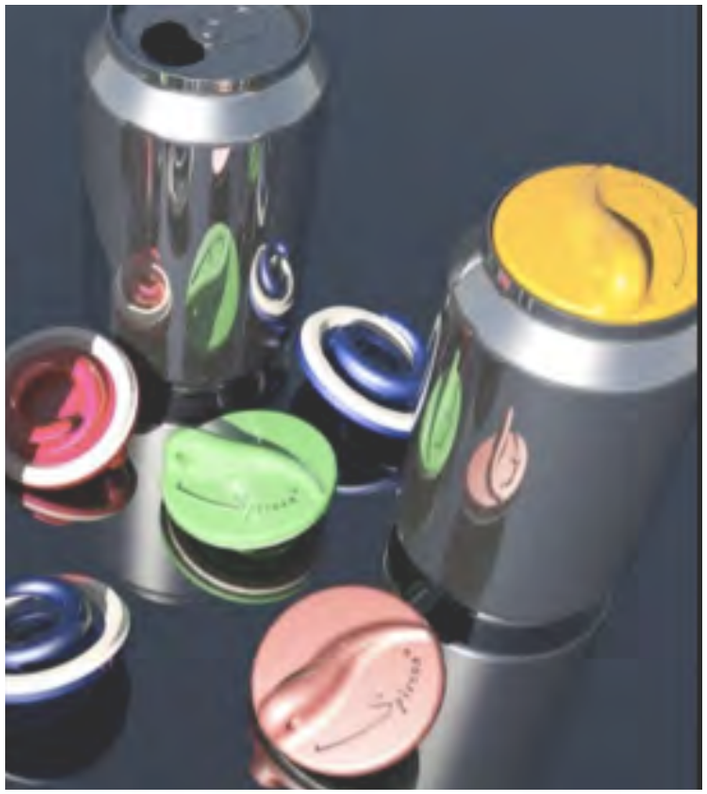
NEW TECHNOLOGIES & TRADE

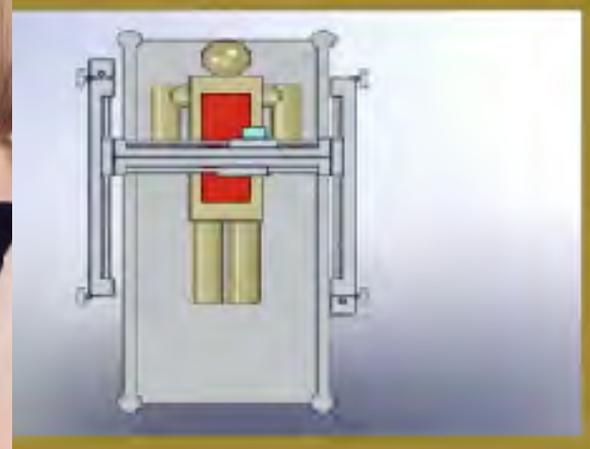
- Internet of Things
- Artificial Intelligence
- Blockchain
- 3D Printing

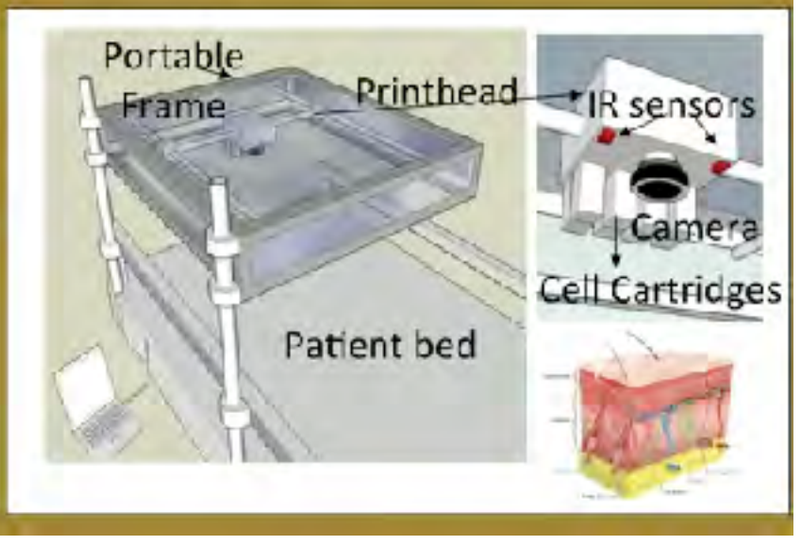
3D PRINTING

A laser hardens the powder
and your model gets its shape.

3D PRINTING



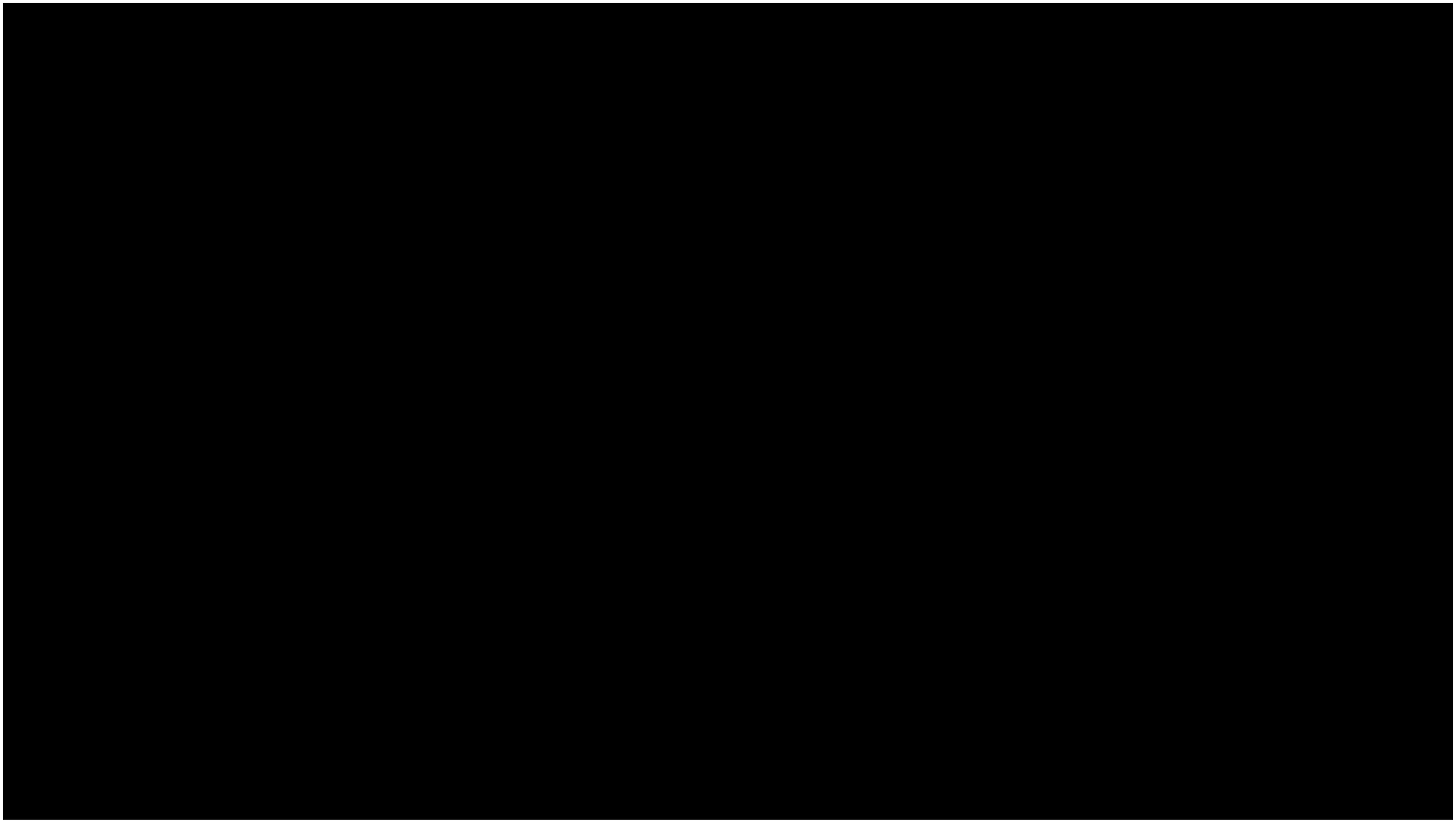



Portable
Frame
Printhead
IR sensors
Camera
Cell Cartridges
Patient bed

3D PRINTING

- Tariffs & taxation
- IP
- Liability
- Safety
- Certifications
- …

DIGITAL FABRICATION



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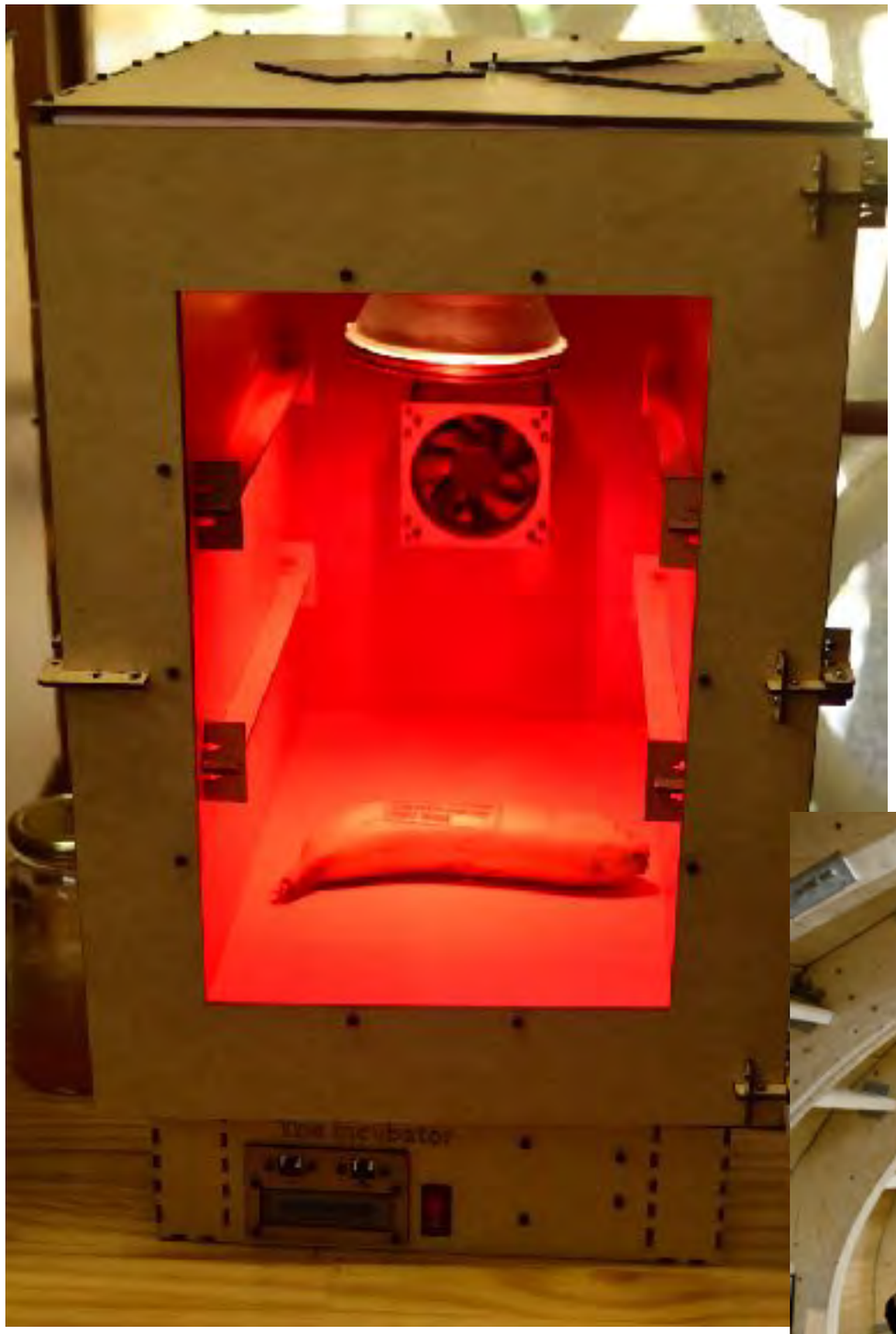

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HOW COMPANIES ADOPT NEW TECHNOLOGIES: CHALLENGES AND IMPACT ON BUSINESSES

LET'S HAVE A LOOK AT THE CURRENT STATE OF THE INTERNET

WHO IS LEADING THIS INNOVATION?

During the 1990s a great number of Internet-based companies were founded in Silicon Valley during the dot-com bubble.

These companies became to be internationally known as **start ups**.

Some of the companies founded during that era are now the some of biggest tech companies today: Apple, Amazon (AWS) and Google (Alphabet).

WHAT IS A START UP?

A start up is:

… solving a problem.

… more questions than answers.

… searching for product/market fit.

… filling a gap in the market.

… changing the ways things are traditionally done.

… about **making change**.

CHART OF THE WEEK

The Unicorn Landscape

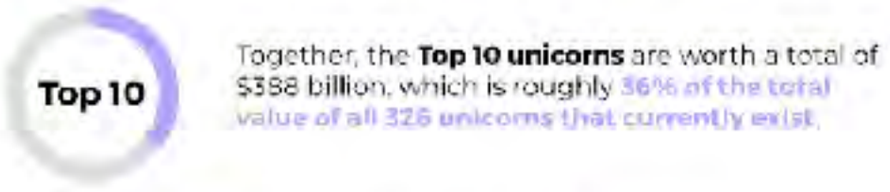
BREAKING DOWN THE WORLD'S 326 UNICORNS BY COUNTRY, SECTOR, AND VALUATION

The unicorn club is growing.

These fast-growing private companies, each valued at over $1 billion, have been multiplying fast—and according to CB Insights, **more than 119 new companies joined the global unicorn club since last year.**

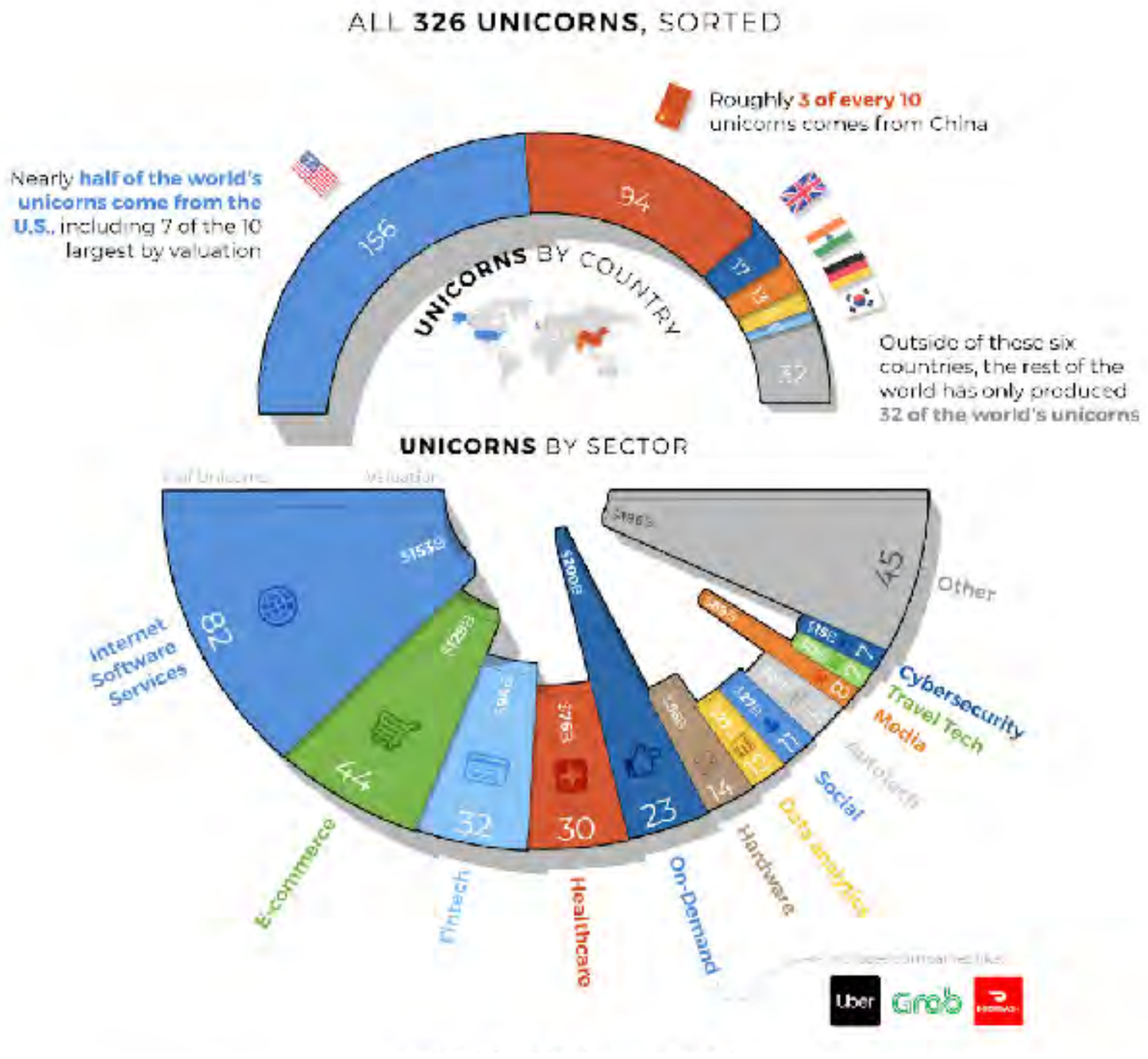
Let's take a look at how the current landscape breaks down, by sector, country, and valuation.

TOP 10 UNICORNS BY VALUATION

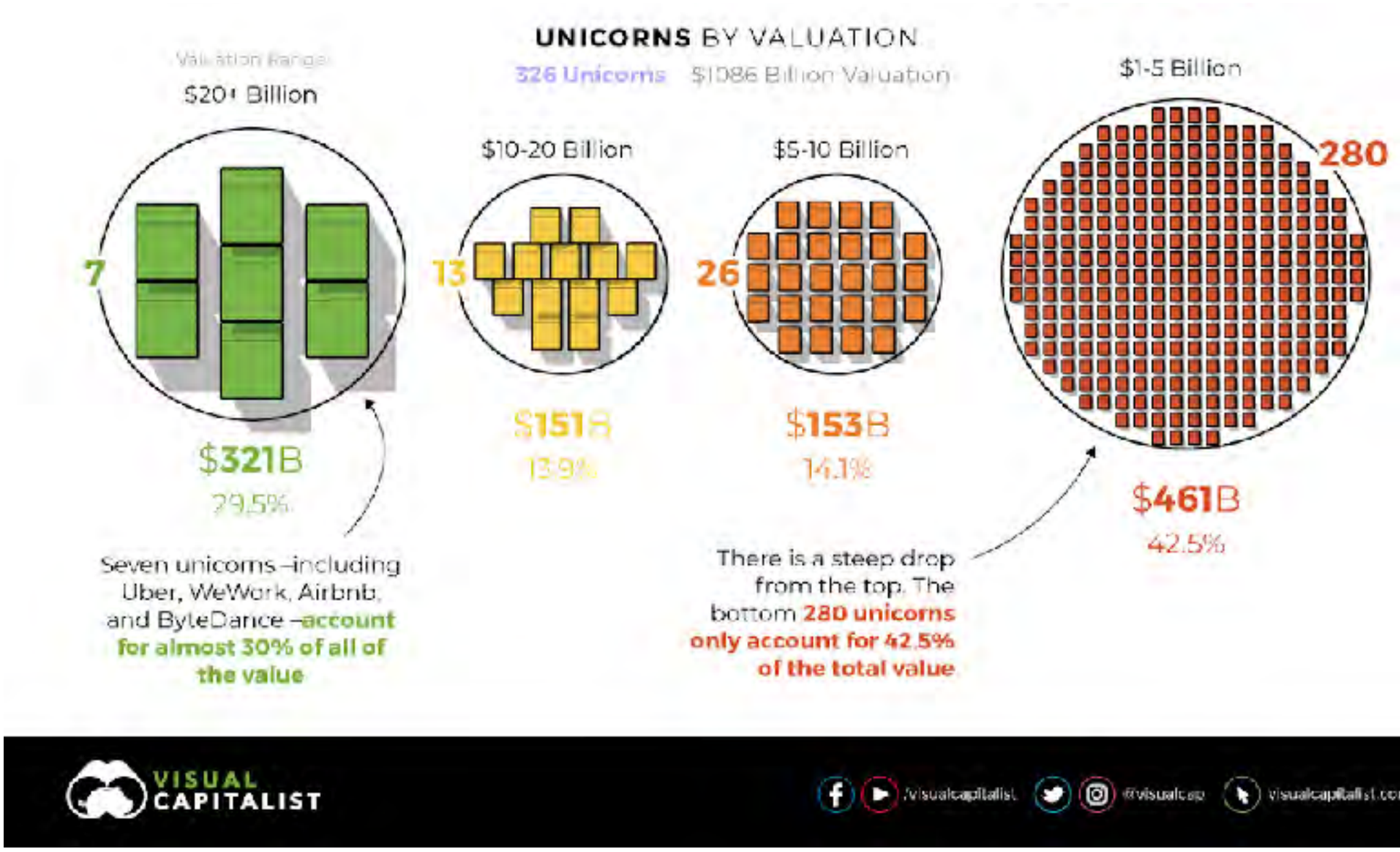


Together, the **Top 10 unicorns** are worth a total of $388 billion, which is roughly 36% of the total value of all 326 unicorns that currently exist.

Source: Visual Capitalist



Source: Visual Capitalist



Source: Visual Capitalist

THE RISE OF START-UPS AND UNICORNS

1. Cloud computing and modern software development practices
2. Smartphones and new channels
3. Social Media
4. Low interest rates - investment in high-risk, high-yield ventures
5. Natural monopolies and high profits
6. Limited physical assets
7. Light regulation

Source: 12 Challenges Startup Culture Must Overcome In Order To Thrive in 2017, Matt Hunckler, Forbes, Mar 22, 2017

CHALLENGES FOR EARLY START UPS

1. Talent and diversity
2. Product-market validation
3. Limited resources
4. Lack of focus
5. Lack of structure
6. Competition
7. Managing constant change
8. Communication
9. Managing people and culture

Source: Visual Capitalist

CHALLENGES FOR UNICORNS

1. Low margins: prices are discounted to supercharge revenue growth
2. Low customers loyalty
3. Some unicorns lack the economies of scale and have barriers to entry
4. Tighter regulation will constrain their freedom

Source: The trouble with tech unicorns, The Economist, Apr 17th 2019

BECOMING DIGITAL

DIGITIZATION

1. Digitisation involves standardising business processes. It is associated with cost cutting an operational excellence.

2. Benefits: efficiency, reliability, predictability = operational excellence.

3. Digitisation is the operational backbone of many businesses.

BECOMING DIGITAL

Many businesses believe that by digitizing they are becoming digital.

However... “becoming digital” involves a very different kind of transformation.

SO... WHAT IS DIGITAL TRANSFORMATION?

Digital transformation is the profound transformation of business activities, competencies, and business models to fully leverage the opportunities of digital technologies.

Digital transformation is the act of radically changing how your organisation works, so that it can survive and thrive in the Internet era.

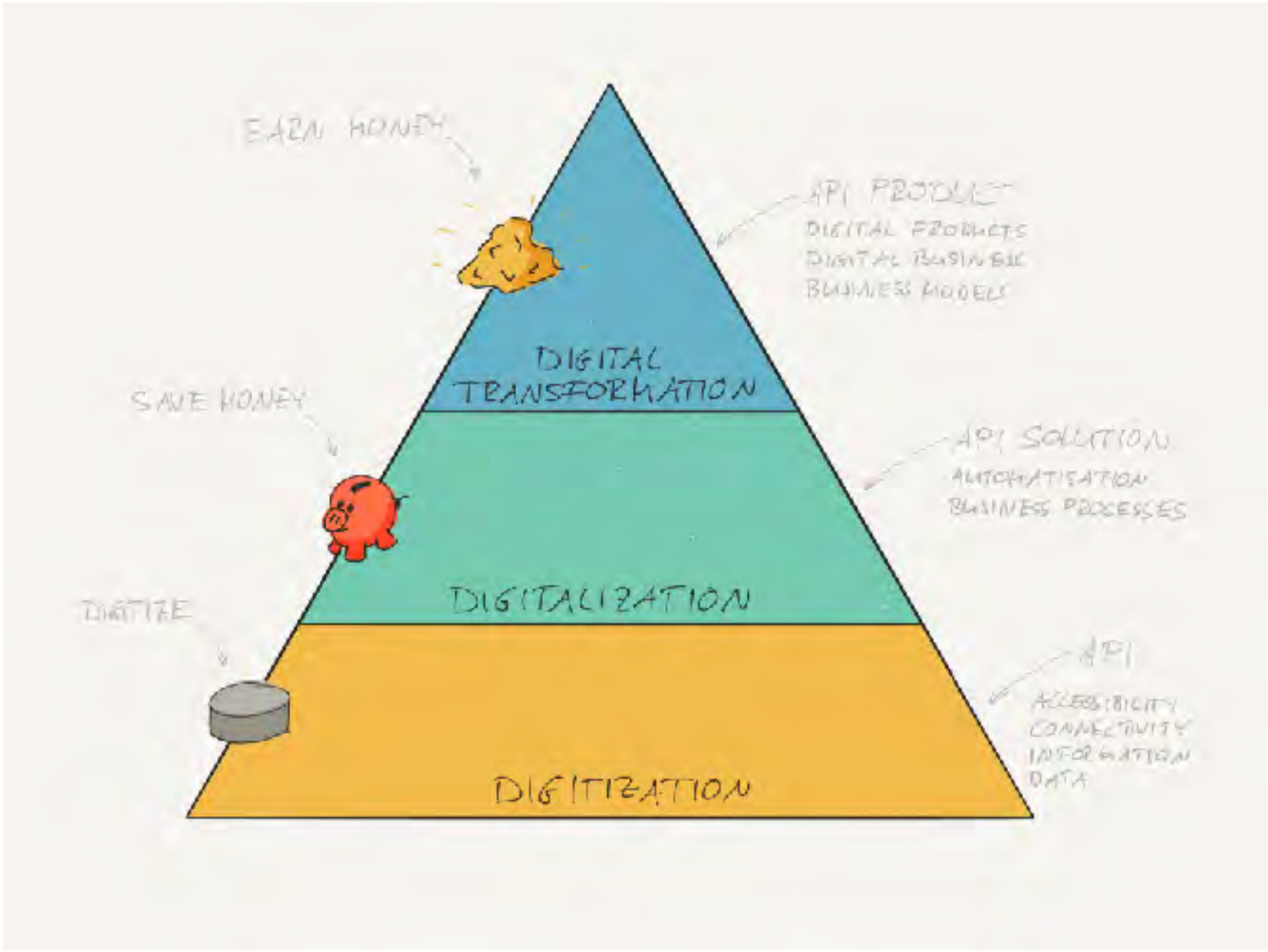
A COMPARISON OF DIGITAL AND DIGITIZED

Figure 1: A Comparison of Digital and Digitized

	Digitized	Digital
Benefits	Operational efficiency, reliability, and cost savings	Revenue generation and growth
Technology Requirement	Operational backbone (e.g., ERP, CRM, shared services)	Digital offerings platform with reusable technical and business services for offerings
Transformation Focus	Process discipline; business standardization where needed	Rapid innovation; introduction of a new value proposition

SOURCE: *DIGITIZED IS NOT DIGITAL*, JEANNE W. ROSS, CYTNHIA M. BEATH, INA M. SEBASTIAN, CISR, OCT. 2017

VALUE OF BEING DIGITAL



SOURCE: What is Digital Transformation, Digitalization, and Digitization, Amancio Bouza, Medium 23 March 2018

BUSINESS TRANSFORMATION

The goal should not be digital transformation, but a business transformation. To be *FUTURE READY*.

To become future ready a company must transform two dimensions:

1. Customer experience
2. Operational efficiency

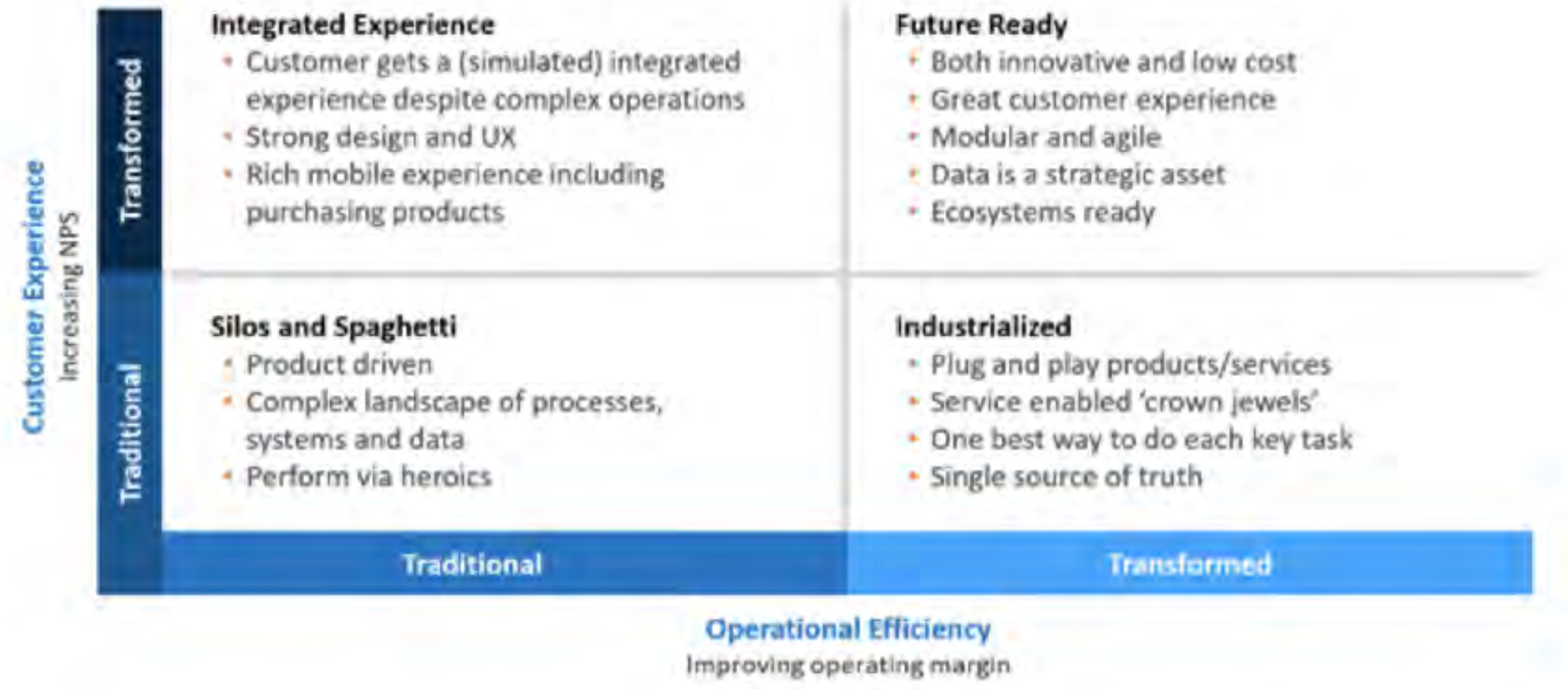
HOW DO COMPANIES ADOPT NEW TECHNOLOGIES?

1. Companies can create digital products by starting with a small, simple product or service - like a start-up.

2. Companies will rely on their operational backbone to ensure the reliability and scalability of their basic transactions.

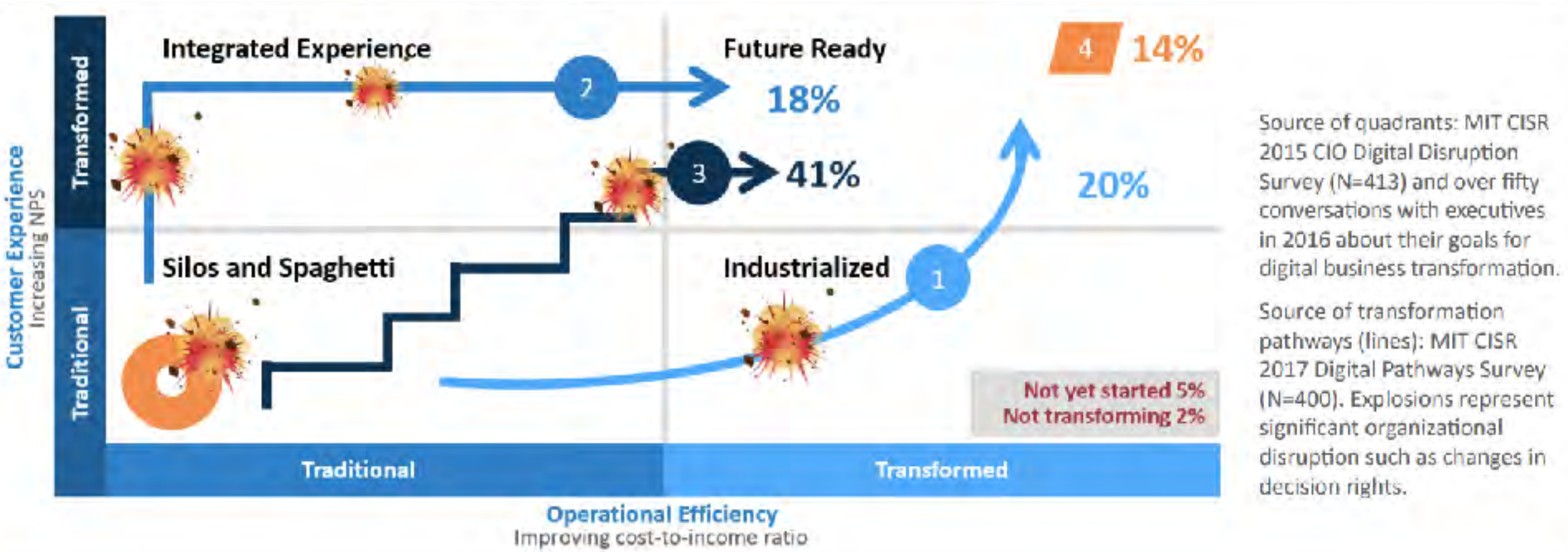
3. However, for digital transformation they will need to architect a second platform to provide access to a reusable digital business capabilities.

A ROADMAP TO DIGITAL BUSINESS TRANSFORMATION



Source: *Future Ready? Pick Your Pathway for Digital Business Transformation,* Peter Weill, Stephanie L. Woerner, CISR, Sept. 2017; and Avanade.

THE FOUR PATHWAYS TO FUTURE READY



SOURCE: *FUTURE READY? PICK YOUR PATHWAY FOR DIGITAL BUSINESS TRANSFORMATION*, PETER WEILL, STEPHANIE L. WOERNER, CISR, SEPT. 2017

WHICH PATHWAY TO CHOOSE?

- Pathway 1: customer experience is around average.
- Pathway 2: your customer experience is below average and there are new scary competitors.
- Pathway 3: customer experience is a problem and you have identified a few areas of improvement. Start with those, then focus on operations and repeat.
- Pathway 4: there is no way to build a new culture, customer experience and operations fast enough to survive.

CONCLUSIONS

1. To thrive start-ups need to grow up fast and have a solid business model that will yield long term revenue and not just growth.
2. Digital Transformation equals radically changing your organisation so it can thrive in the Internet era.
3. DT is hard because it’s primarily a function of people and behaviours and relationships.
4. To succeed you need a Business Transformation: make people understand the *why* and not just the *what*.
5. Communication is KEY. Developing soft skills is becoming a necessity to succeed in business.

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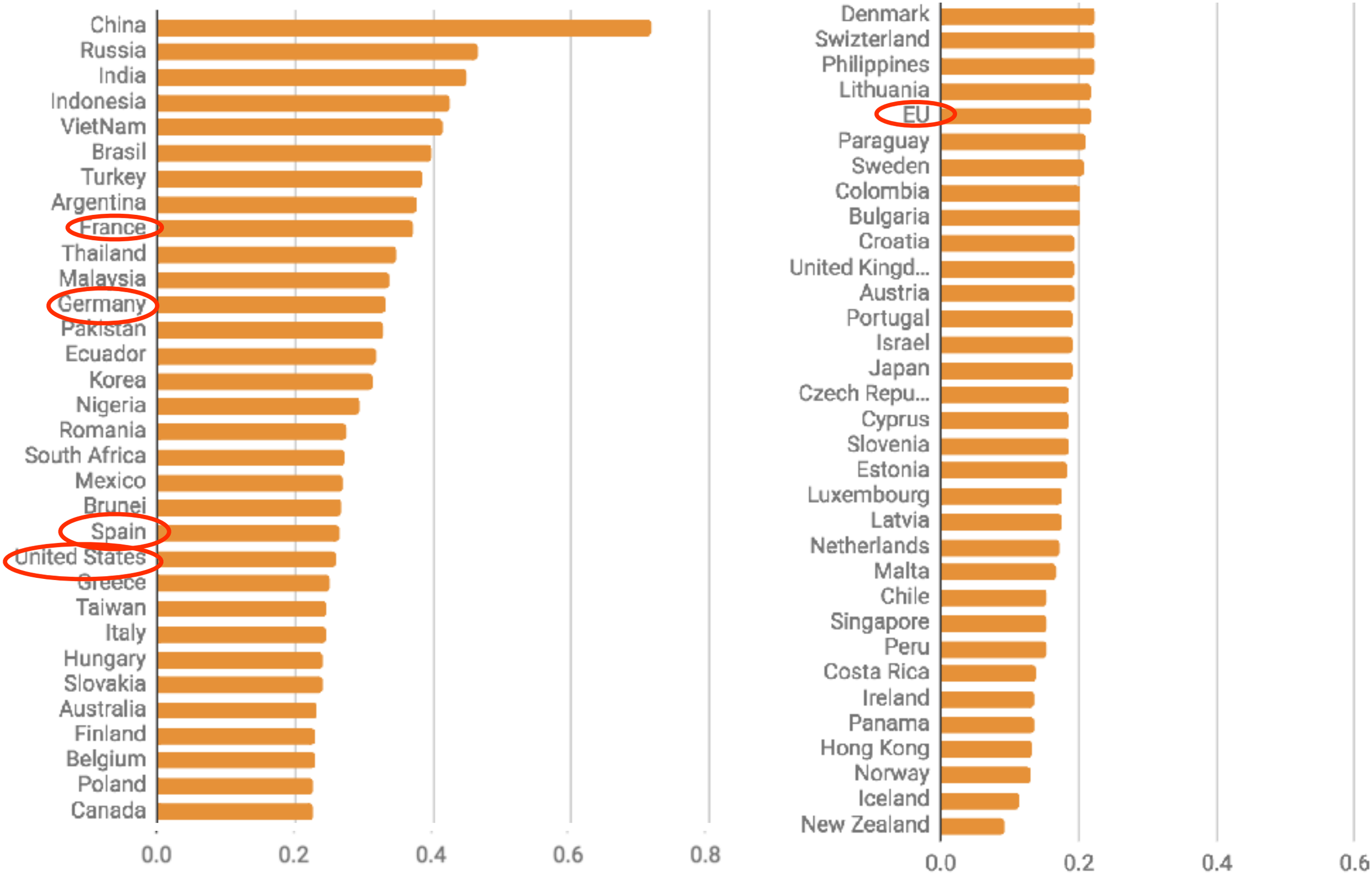
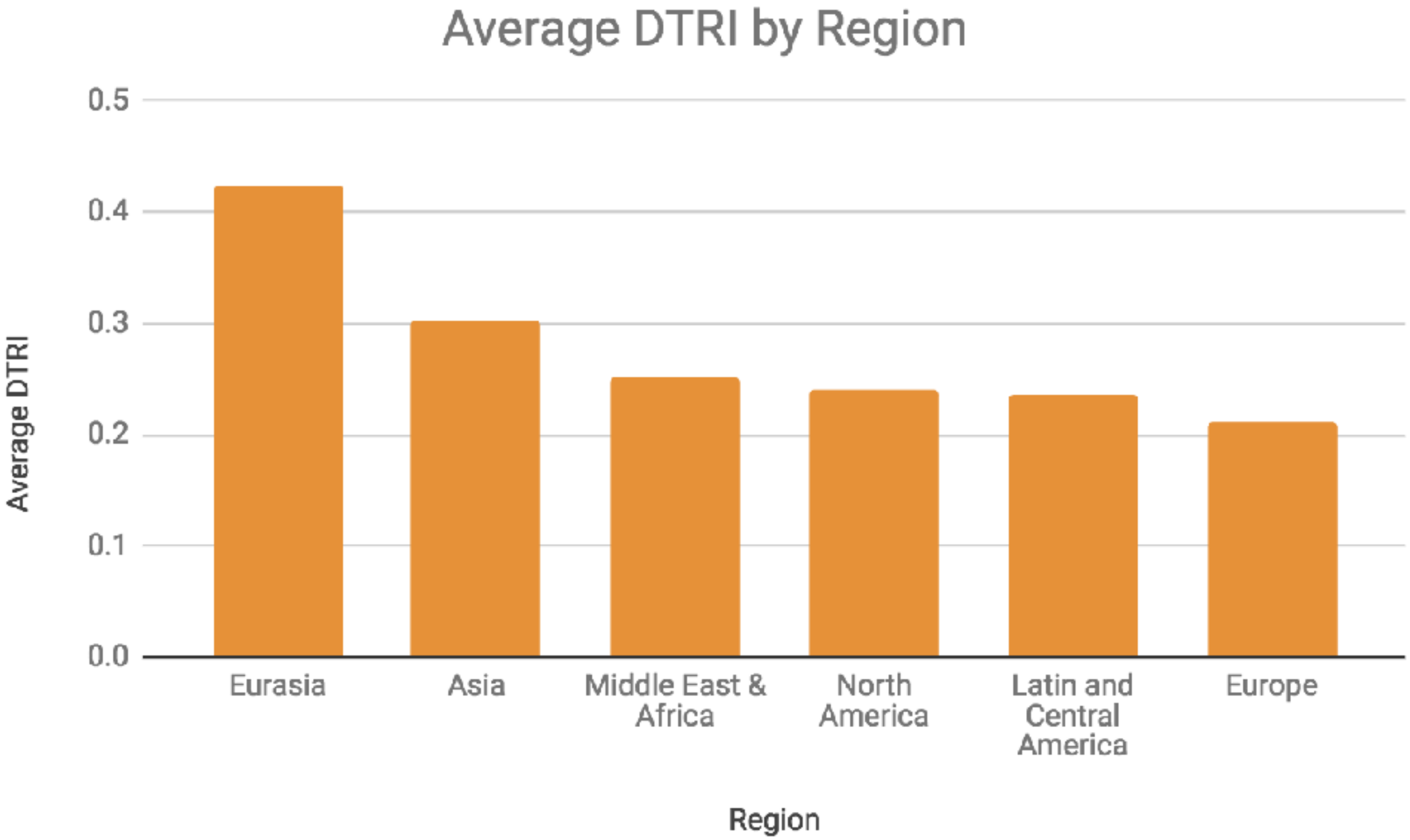
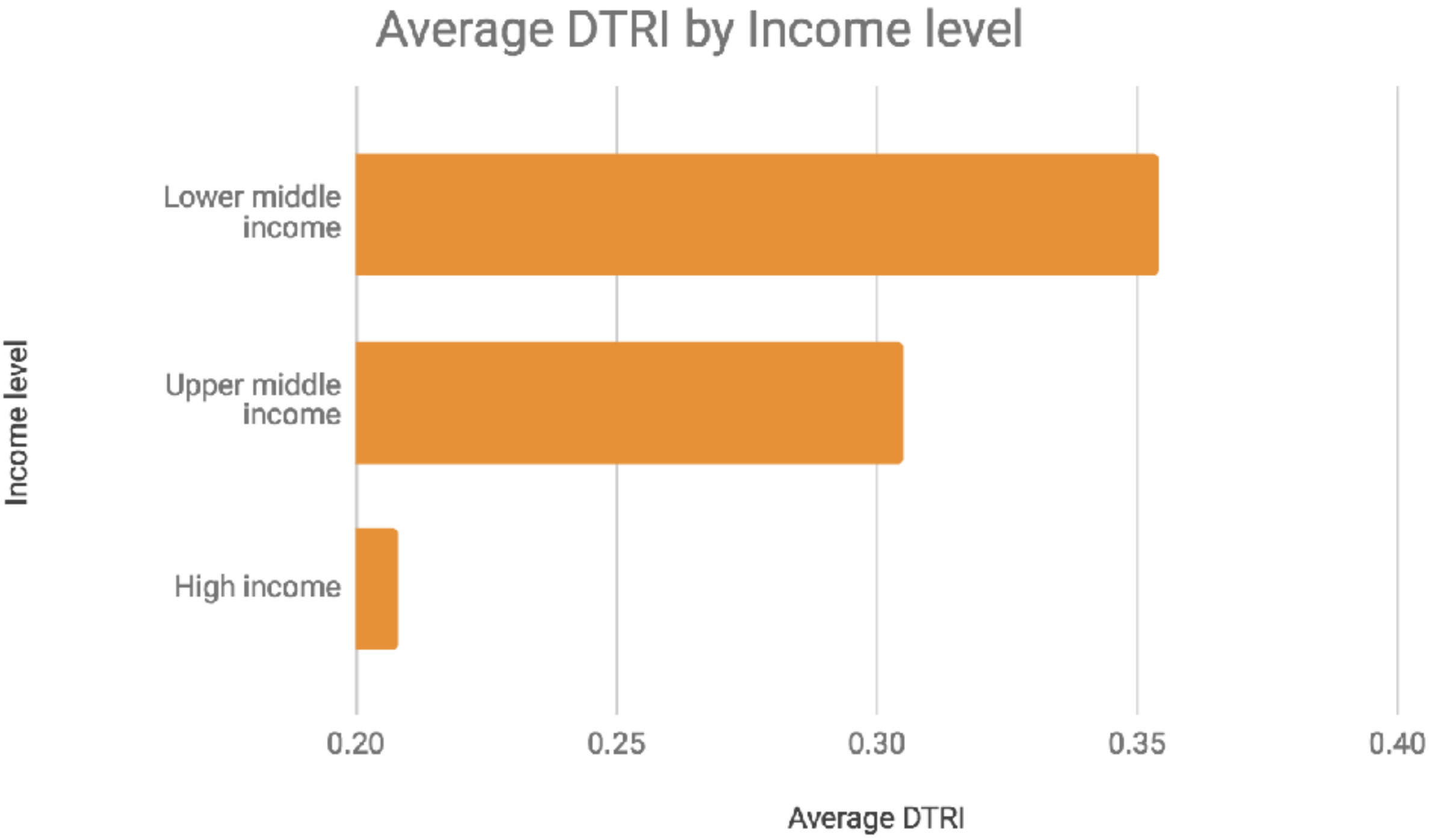
Digital Trade Restrictiveness Index (DTRI)



Source: Own calculations based on Digital Trade Estimates Database (www.ecipe.org/dte)

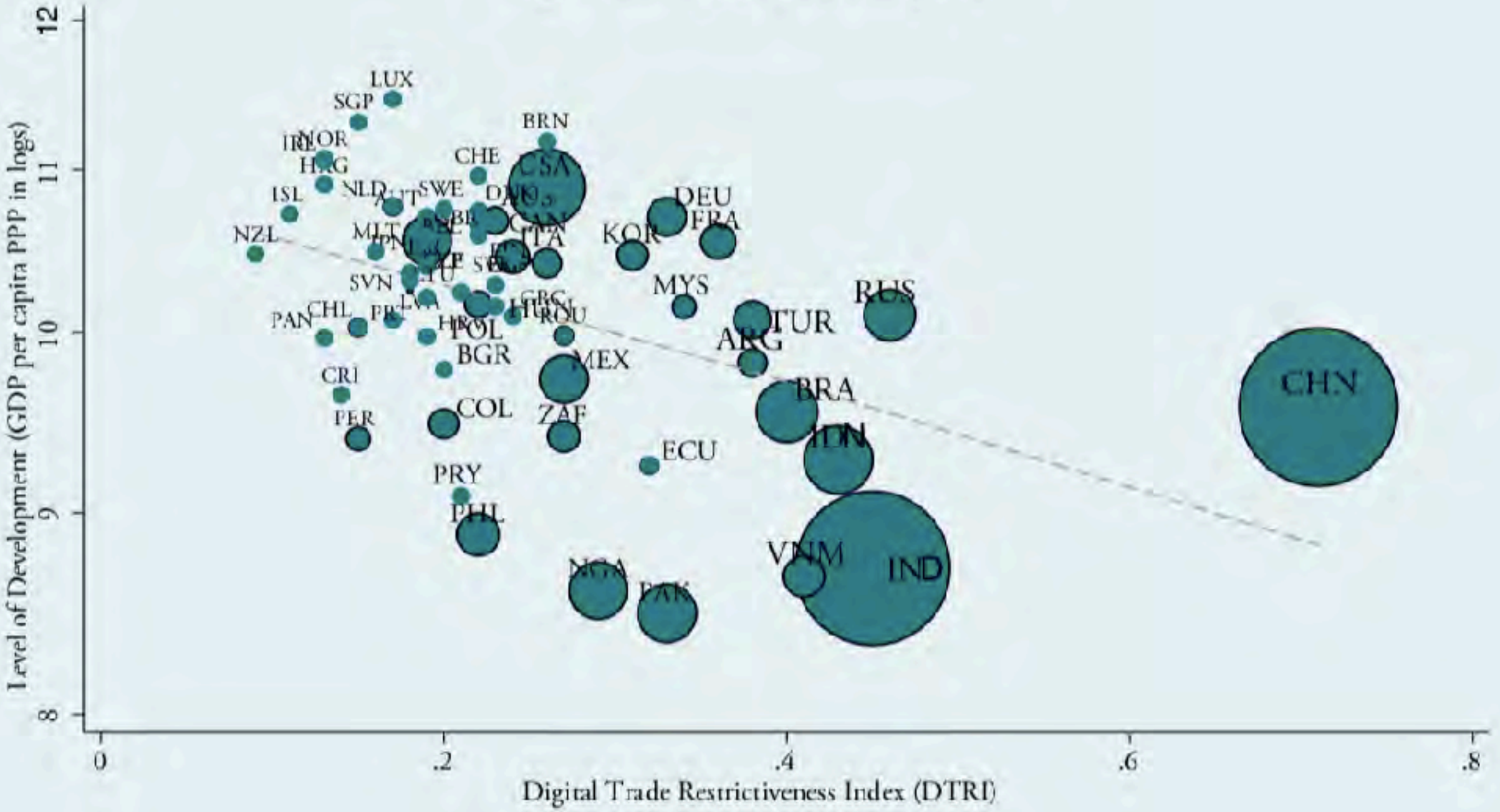


Source: Own calculations based on Digital Trade Estimates Database (www.ecipe.org/dte)



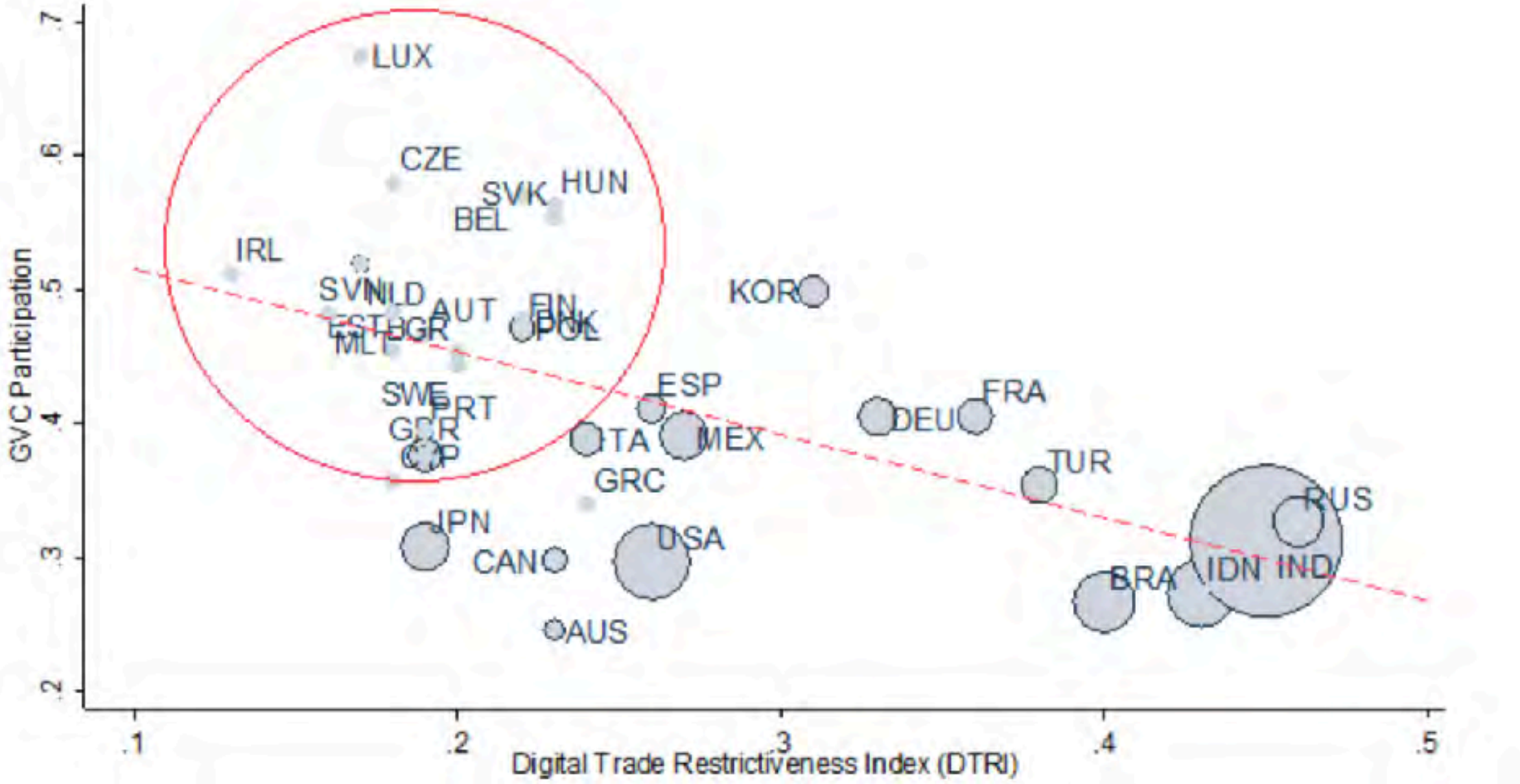
Source: Own calculations based on Digital Trade Estimates Database (www.ecipe.org/dte)

Figure B1: DTRI and Level of Development



Source: DTRI Report, p. 21

GVC PARTICIPATION & DTRI



Source: Van der Marel (2018)

DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

DIGITAL TRADE RESTRICTIVENESS INDEX (DTRI)

13 main areas:

1. Tariffs and trade defence
2. Taxation and subsidies
3. Public procurement
4. Foreign investment
5. IPR
6. Competition policy
7. Business mobility
8. Data policies
9. Intermediary liability
10. Content access
11. Quantitative trade restrictions
12. Standards
13. Online sales and transactions

OECD DIGITAL SERVICES RESTRICTIVENESS INDEX

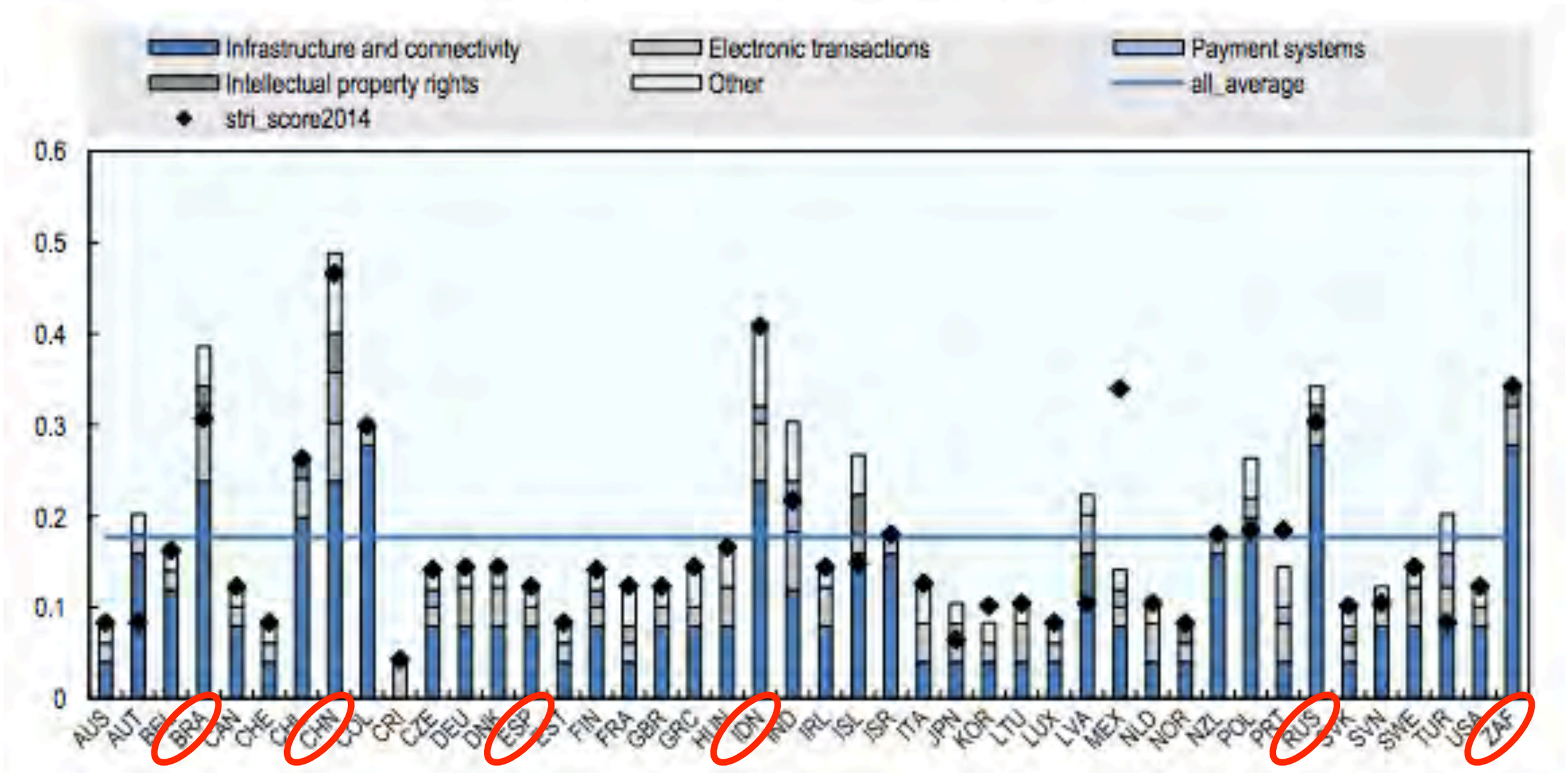
OECD Trade Policy Papers No. 221

The OECD Digital Services Trade Restrictiveness Index

Janos Ferencz

OECD DIGITAL SERVICES RESTRICTIVENESS INDEX

Figure 5. Digital STRIs (2018)



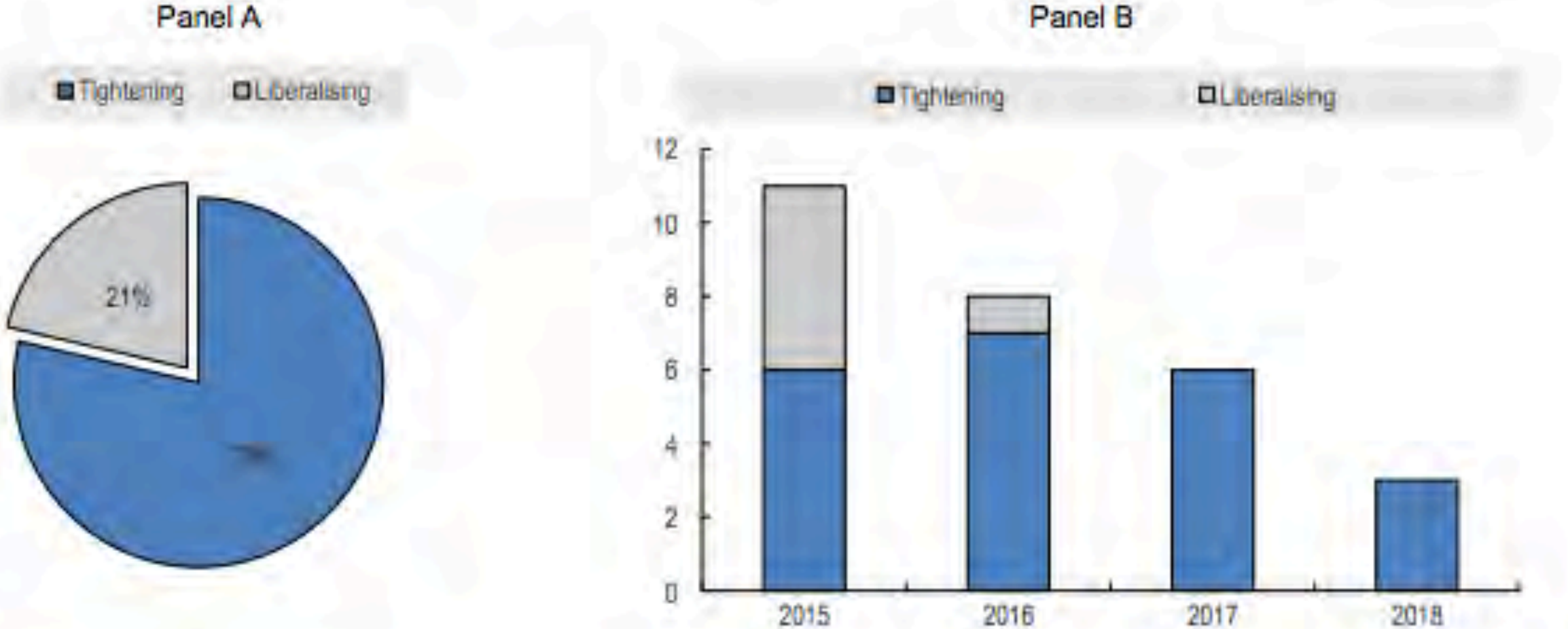
Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
Source: OECD Digital STRI.

OECD DIGITAL SERVICES RESTRICTIVENESS INDEX

Figure 6. Policy changes affecting trade in digitally enabled services (2014-2018)

Panel A: Nature of changes over the period 2014-2018

Panel B: Number of changes across years



Source: OECD Digital STRI.

SOME EXAMPLES OF NEW TRADE RESTRICTIONS

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PUBLIC PROCUREMENT

1. Preferential purchase schemes covering ICT products, services

2. Surrendering of patents, source code etc.

3. Technology mandate (encryption, formats)

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COMPETITION POLICY

1. Lack of liberalisation of the telecommunication sector

2. Government ownership of shares of the incumbent telecommunications operator

3. Anti-competitive practices in the telecommunication sector

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DATA POLICIES

CROSS-BORDER

1. Restrictions cross-border on data flows (data localisation)

DC

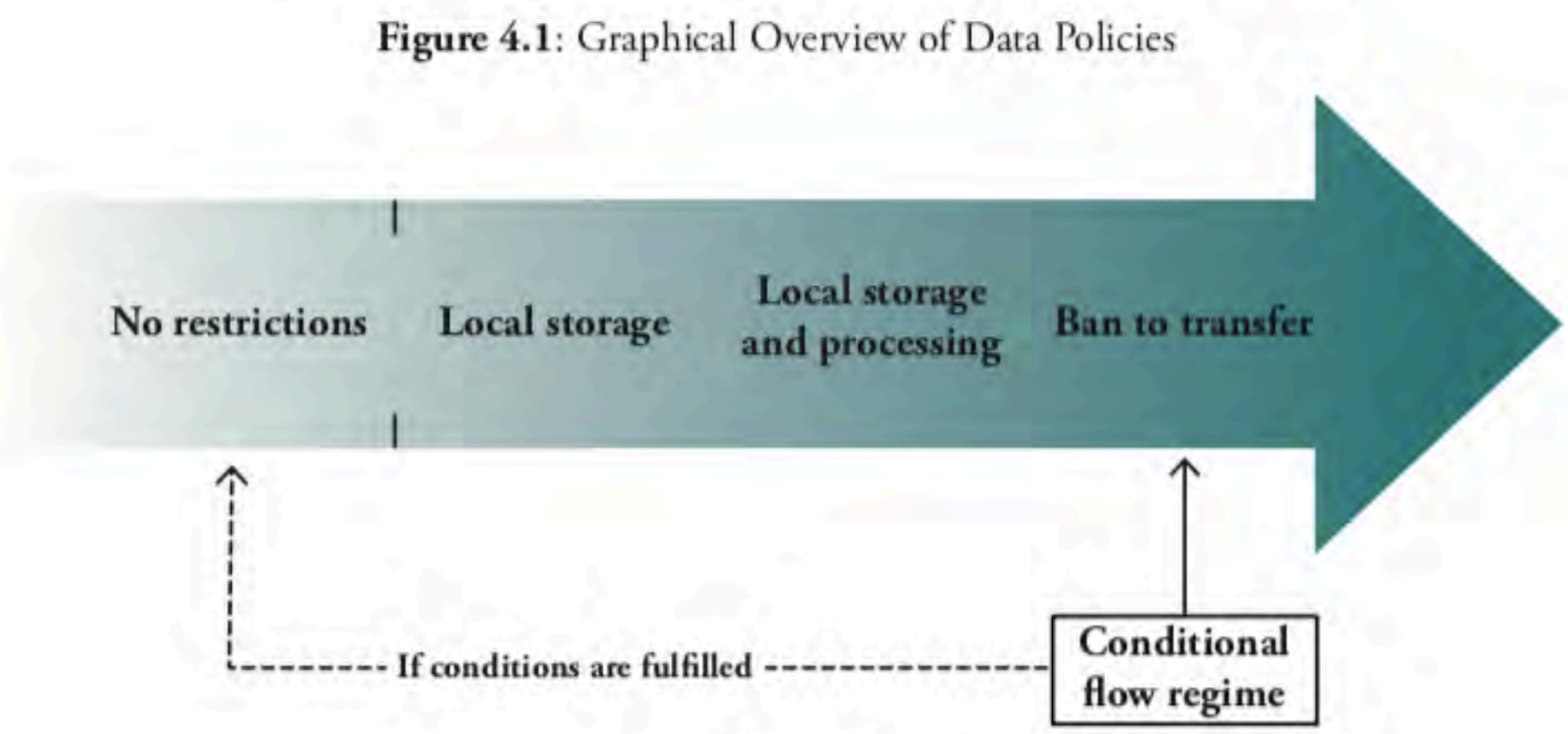
2.

3.

4.

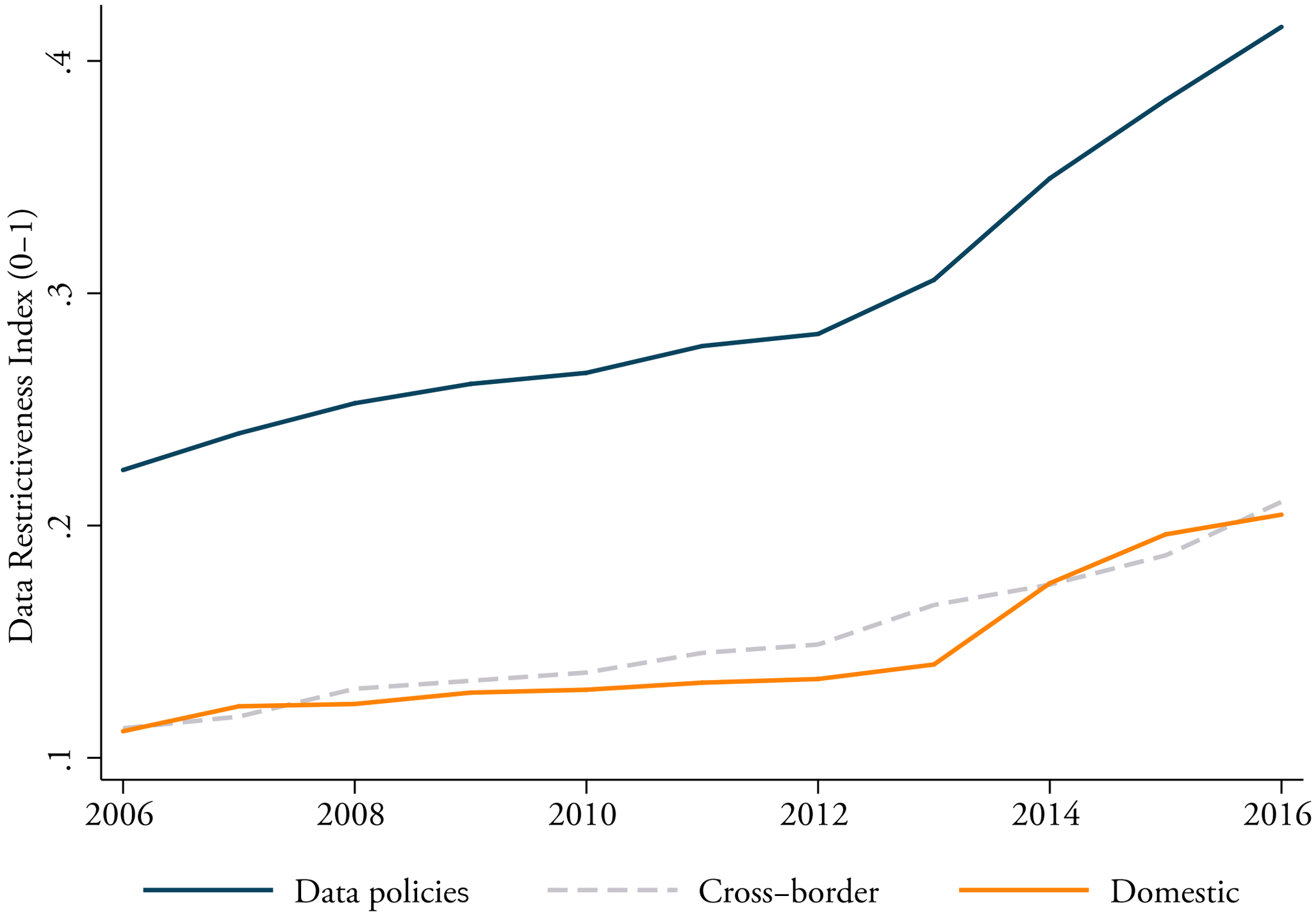
5.

Figure 4.1: Graphical Overview of Data Policies



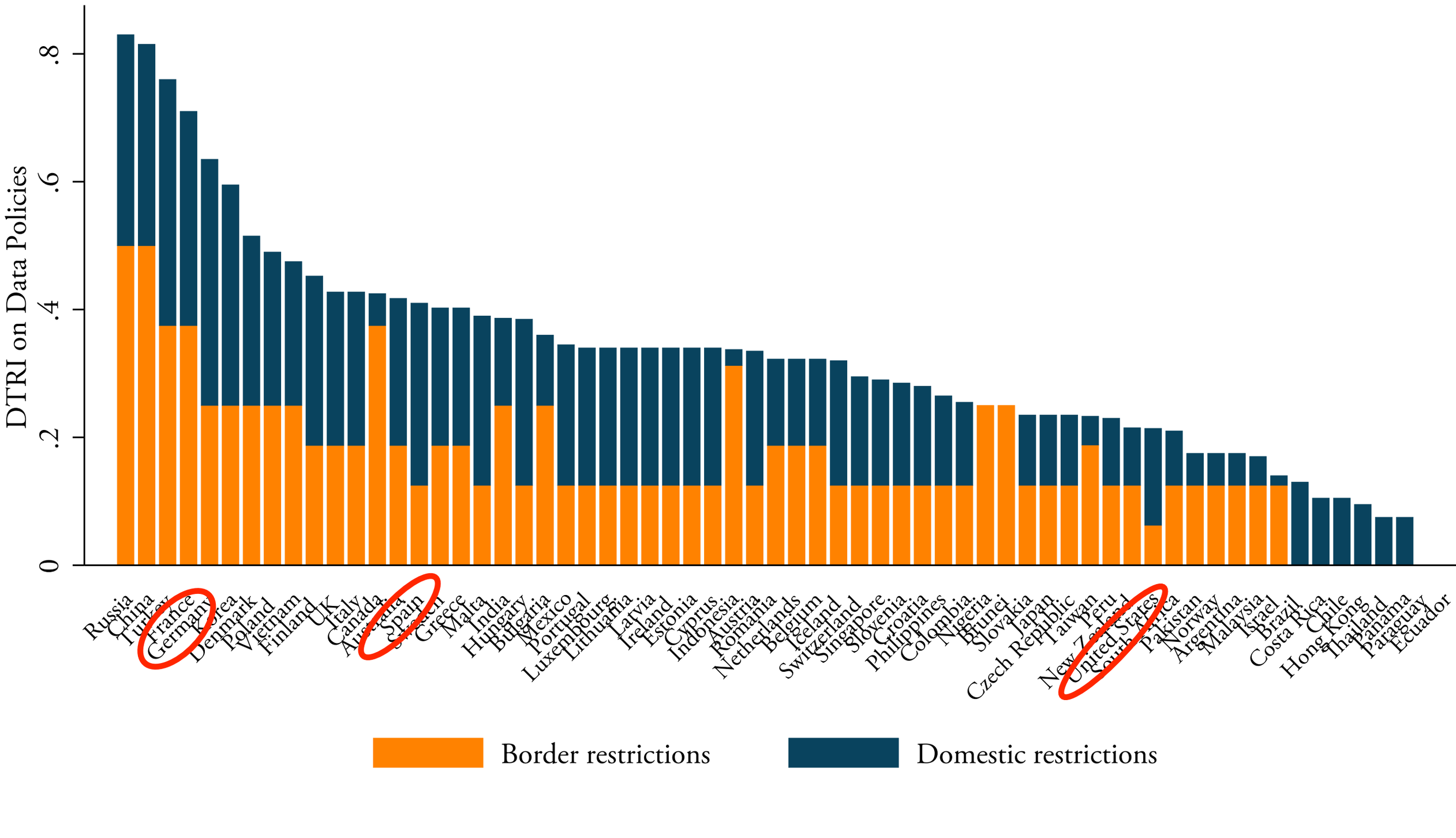
Source: Ferracane (2017).

DATA POLICIES: SUB-INDEX



Source: Ferracane, *et al.* (2018)

DATA POLICIES: SUB-INDEX



Source: Ferracane and Van der Marel 2018)

THE COST OF DATA PROTECTIONISM

- STRICT CROSS-BORDER DATA POLICIES INHIBIT SERVICES' IMPORTS: average imports' increase 5 percent

  (Ferracane & Van der Marel, 2018)

- STRICT DOMESTIC DATA POLICIES INHIBIT PRODUCTIVITY: average TFP gain 4.5 percent

  (Ferracane, et al., 2018)

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INTERMEDIARY LIABILITY

1. Framework providing a safe harbor

2. Strict notice and takedown regime

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CONTENT ACCESS

1. Censorship, filtering

2. Bandwidth, net neutrality

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STANDARDS

1. Restrictions related to telecom standards

2. Restrictions related to product safety certification (EMC/EMI, radio transmission)

3. Product screening and testing requirements

4. Encryption requirements

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ONLINE SALES AND TRANSACTIONS

1. Barriers to fulfilment

2. Domain name (DNS) registration requirements

3. Online sale restrictions on certain products

4. Discriminatory consumer protection law for online sales

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WTO

- 164 members
- Trade in goods and services
- GATS: General Agreement of Trade in Services
- Dispute settlement
- Restrictions to data flows? Digital services?

PILLARS OF GATS DISCIPLINE

SCHEDULE

OF

COMMITMENTS

W/120 list

COVERAGE OF GATS COMMITMENTS

- US—Gambling
- China—Audiovisuals
- China—Electronic Payments

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

NEW ISSUES TACKLED

IN REGIONAL TRADE AGREEMENTS

1. Cross-border data flows;
2. Location of computing facilities;
3. Privacy and data protection;
4. Cybersecurity and spam control;
5. Source code;
6. Custom duties on electronic transmissions;
7. Confidence-enhancing measures: electronic signatures, online authentication, consumer protection…

CURRENT DISCUSSIONS

3 main developments at the 11th Ministerial Conference in Buenos Aires (2017):

1. Continuation & reinvigoration of 1998 Work Programme

2. Renewal of the moratorium on custom duties until 2019

3. *Joint Statement on Electronic Commerce initiative (JSI)* – exploratory work towards future WTO negotiations on trade-related aspects of e-commerce (71 Members)

JOINT STATEMENT ON ELECTRONIC COMMERCE INITIATIVE (JSI)

Discussions structured under 4 themes:

- Enabling digital trade/e-commerce
- Openness and digital trade/e-commerce
- Trust and digital trade/e-commerce
- Cross-cutting issues including development, transparency & cooperation

JOINT STATEMENT ON ELECTRONIC COMMERCE INITIATIVE (JSI)

January 2019: **World Economic Forum**

Joint Statement on E-commerce issued by **76 WTO Members**

Statement confirms the group's "intention to commence WTO **negotiations**" on e-commerce

2 objectives:

- "will seek to achieve a high standard outcome"
- "with the participation of as many WTO Members as possible"

THANK YOU

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